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# Health Information Community Networks

## SYNOPSIS

The author supports the development of health information community networks (HICNs) as an important tool for use by individuals and community groups. HICNs can enable citizens, organizations, and communities to exchange geographically based information on community health status. Through HICNs, individuals and groups will be able to share information, prioritize issues, resolve conflicts, estimate the impact of policy initiatives, and plan, organize, manage, and evaluate programs and projects that deal with community health issues.

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The development of health information community networks (HICNs) as one element in the national health information infrastructure is critical to the health and quality of individual lives within communities, says the Institute of Electrical and Electronic Engineers. HICNs deal with the health of communities, while personal health information networks deal largely with individual clinical information, and population health information networks deal with national and community epidemiologic trends.

Through HICNs, local individuals and groups will be able to come together to share information, prioritize issues, resolve conflicts, estimate the impact of policy initiatives, and plan, organize, manage, and evaluate programs and projects that deal with such community health issues as teen pregnancy, violence, suicide, unemployment, poverty, and housing.

While personal and population health information networks are used primarily by health professionals, patients, and population specialists,

HICNs would enable a broad range of community organizations and citizens to communicate with each other, as both providers and users; to choose the form of communication (video, text, or audio) best suited to their communication needs; and to develop and assemble information relevant to the overall well-being and quality of life of the community.

### EMERGENCE OF NEW CONCEPTS OF HEALTH

As we enter the 21st century, we see significant paradigm shifts occurring in health care. The most basic shifts have been toward an emphasis on wellness and prevention, a focus on the management of chronic illness, and a growing recognition of the significant role that the health of the community plays in the health of individuals.

The health of individuals and groups is less related to medical care (about 10% is the estimate) and much more closely connected to social, economic, and environmental factors in communities. Research tells us repeatedly that health is more dependent on the quality of life than on diagnosis and treatment of acute medical conditions. Social dilemmas such as teen pregnancy, suicide, smoking, violence, drug and alcohol addiction, crime, disintegration of the family unit, and poverty have a significant effect on health in a given community.

This broader view of health is reflected in the World Health Organization's definition of health, with its focus on the physical, mental, spiritual, social, and emotional well-being of the community and of the individuals within it. It is also reflected in the conclusions of the American Public Health Association in 1992 and 1993 as to the need for a national health information infrastructure that will encompass administrative, clinical, personal, population, and community health information networks.

### COMMUNITY NETWORKS RESPOND TO THE HEALTH NEEDS OF THE 21ST CENTURY

A basic element in the development of HICNs will be the definition of the community or communities in which

such networks must function and with which they will be concerned. In health services, the community concept has, first and foremost, a geographic dimension. Community, in this sense, refers to people and organizations within a reasonably circumscribed geographic area in which there is a sense of interdependence and belonging. Nevertheless, community impacts on health may not always be confined to the particular geographic boundaries of a given community in which individuals reside and work.

Thus users can draw on data from other health information networks, as appropriate. HICNs can enable citizens, organizations, and communities to exchange geographically based information on community health status and to marshal resources on a collaborative partnership basis to address health problems. Moreover, as communities across the nation confront common issues of violence, unemployment, teen pregnancy, housing, and the like, they can benefit from sharing information about their respective experiences. HICNs can connect communities and organizations and facilitate their information-sharing needs.

A distinctive feature of HICNs will be the broad range of organizations and participants from the community who will generate and use the data services of these networks. HICNs must encompass the data requirements not only of traditional health care providers and users but, more important, of a

wide range of community organizations whose primary concerns may not be the health of individual patients or population groups but which nevertheless have significant impacts on their health.

To facilitate their information and educational roles, it is essential that HICNs be as inclusive and accessible as possible to all originators and users of health and community information. Individuals and organizations with little technical expertise must find them easy to use. This will mean placing terminals in churches, schools, libraries, community centers, and, ultimately, in the homes and workplaces of community members.

These networks must also respond to the ethical dilemmas that the collection and dissemination of health and community data can entail. One of these dilemmas involves the need to assure data quality. Another is the need to assure privacy and security. Conflicts may arise

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between the user's right to know and individuals' right to privacy and confidentiality with regard to their health status. Social service agencies and community organizations seeking or divulging health-related social, economic, or medical information must protect the individual's privacy and confidentiality. The need to know by others must always be balanced by the right to know as controlled by the individual.

## ROLE OF HICNS

HICNs will serve as a source of critical data impacting the health of the community and as a facilitator of efforts by individuals and organizations within the community to promote the health of the community. HICNs will draw on both local and national personal and aggregated health, environmental, and social data to a much greater extent than administrative, clinical, or personal health information systems

HICNs will be able to mobilize and provide interest groups in a community with a forum for expression and collaboration for the benefit of the whole community. They will enable disparate organizations and individuals to collaborate and form partnerships to address the health care needs of the community. They will help groups within the community to identify resources and establish priorities for dealing with community health issues.

Community information networks also have a potential role as educator-teachers and facilitator of community learning about health in its broadest sense. For example, if one wanted to know about infant mortality, the system could provide the relevant medical data, or it could show how infant mortality is connected to single parenthood, poverty, nutrition, availability of jobs, local economic development, social supports, and transportation. In doing so, the system would help to educate and enlarge the views of concerned citizens and organizations and expand the opportunities for involvement of anyone using it. Moreover, it could tap into the experience of other communities and provide monitoring data on where

the community is and might be able to go in dealing with the issue.

## FUNCTIONAL REQUIREMENTS OF HICNS

Each HICN will be user- and provider group-focused. All must be able to share information with each other. With this in mind, the following requirements must be kept in mind in the design and development of HICNs:

- Incentives must be put in place for the development of high-capacity networks capable of enabling users to send and receive video, audio, and text communications that respond to the health information and communication needs of community organizations and individuals.
- The networks must be capable of interconnecting with each other and with other relevant networks; they must be interoperable and have architectures and common platforms that allow heterogeneous access devices in order to promote easy access and use.
- The networks must be universally available to community organizations and individuals in their homes and places of work.
- The networks must be affordable and capable of use by community organizations and individuals.
- The networks must be reliable, with hardware and software designed to provide maximum protection to users for the confidentiality of communications transmitted over them.
- Community participation must be provided for in the design and management of networks.

In order to assure the development of HICNs, a coherent national policy needs to address these design and implementation requirements at both the national and local levels. ■